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The Art of **LACQUERING**

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The
**Egyptian Lacquer
Manufacturing Company**

**5 East 40th Street
NEW YORK**

CHICAGO

LOS ANGELES

THE ART OF LACQUERING

I.

What Is Lacquer and Lacquer Enamel?

WHAT is Lacquer and Lacquer Enamel? For those who are familiar with the uses of these materials, this question will need no answer. For the uninitiated, however, a word in this connection will not be amiss. Thousands of years ago, Lacquers were used by the Egyptians, Chinese, Japanese and Hindus as a protective and decorative finish, and much of the work done by the ancients is still intact and practically as good as the day it was done, as one may see by a trip to the larger museums of the country, where much of this work will be found. To-day, Lacquers and Lacquer Enamels are used for identically the same purpose and are even more durable than the Lacquers used by the peoples of centuries ago. Like everything else, the making of Lacquers has improved with the ages, and to-day we have the benefit of years of experiments in this industry.

The Lacquers made first by the Orientals were composed chiefly of vegetable gums. To-day we have more modern and better Lacquers, some made from nitro cotton dissolved in solvents to which is added certain high-grade gums, and in other cases Lacquers made from high-grade gums which have undergone scientific treatment to best adapt them for these products. By a process entailing the addition of pigments, a Lacquer Enamel is produced. These processes with high quality raw materials, give us a quick-drying solution, which dries evenly and smoothly, leaving a durable yet flexible, waterproof, celluloid-like film that will protect all surfaces to which it is applied.

THIS booklet is issued for the purpose of outlining the most important steps necessary for the proper application of Lacquers and Lacquer Enamels, and will present the subject in six chapters, as follows:

1. What is Lacquer and Lacquer Enamel?
2. Why use Lacquer and Lacquer Enamel?
3. Classes of Lacquers and Lacquer Enamels.
4. Importance of Cleaning Before Lacquering and Enameling.
5. Lacquering and Enameling.
6. Treatment of the Articles after Lacquering or Enameling.



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Lacquer Products are indispensable in the metal industries, being used for the prevention of tarnish and oxidation caused by atmospheric changes and to produce unique and beautiful finishes. They are also highly important in the finishing of wood, in this case, imparting a clear, lasting finish and excluding the entrance of moisture, eliminating the possibility of warping and swelling.

Lacquer Products are not only used by these industries, however. Their uses are legion, as is evidenced by the diversity of trades using them and the variety of objects about us in home, office and out of doors, nearly all of which have been treated in either a protective or decorative way, or both, with one or another of the many modern Lacquer Products.

From the foregoing, we can sum up Lacquers and Lacquer Enamels as being quick, air-drying solutions which, when properly applied to almost any article, will preserve and beautify the original finish or produce an entirely new finish by its use.



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II.

Why Use Lacquers and Lacquer Enamels?

THE object of Lacquering an article is either for the purpose of protection or decoration to whatever it is applied. In the case of metals for instance, it must protect the surface, highly polished or otherwise, from discoloration usually produced by the combined action of air, moisture and various gases with which the atmosphere often becomes contaminated, improve the looks and in the case of a polished surface, increase the brilliancy of the lustre by coating it with a hard, durable transparent film. Metals thus treated with Lacquers will wear indefinitely without tarnishing and the beauty of finish obtained by their use will be long lasting. Wood Lacquers are also being successfully used to replace stains and varnishes. The advantage in this instance being their quick-drying properties and waterproofing qualities. With varnish of the ordinary variety, it is necessary to apply two or more coats, depending upon the quality of the work, allowing from forty-eight to seventy-two hours between each coat. With Wood Lacquers, it is different. Successive coats can be applied hourly, making it possible to complete a piece of work in less than a day; whereas with varnish, the same piece of work would require from two days up, depending on the number of coats to be applied. Manufacturers, therefore, find that Lacquer has distinct advantages over varnish in being durable, waterproof and time and labor-saving in its application.

Lacquer Enamels are used principally as a decorative coat, being largely used



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and forming an important part of the popular finishes produced by lighting fixture, novelty and toy manufacturers. These industries have chosen Lacquer Enamels also for their quick-drying properties and for the wide range of colors obtainable in this material.

The protective, decorative, time and labor-saving qualities of Lacquers and Lacquer Enamels are some of the advantages which make them unequalled for the purposes used, and the truth of which is attested by the wide scope of uses to which they are being put to-day. No matter how durable or beautiful the manufacturer's basic finish may be, his everlasting problem is, "Will it keep?" If not, it will not sell.

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III.

Classes of Lacquers and Lacquer Enamels

IN order to intelligently select a Lacquer or Lacquer Enamel, one must first consider the nature of the article to which it is to be applied. There are separate Lacquers for gold, silver, brass, copper, iron, steel and other metals, as well as wood, fibre, plaster, paper, etc. There are Lacquers especially adapted for use with colors, and in addition to these come the Lacquers intended to have opaque surfaces, such as Glossy Black and Dead Black Lacquers, Lacquer Enamels and Bronzing Liquids, intended for use with Bronze Powders. These Lacquers are again divided into three distinct classifications dependent upon whether they are to be applied by the brush, spray or dipping process.

The selection of any one of these methods of application depends largely on the object to be Lacquered or Enameled. Upon articles presenting a large, flat surface, or upon objects with irregularity of shape, it is advisable to use either the brush or spray method. Smaller articles are easily dipped, especially small hardware, trunk hardware, casters, etc. If one stops to consider the general nature of the article to be Lacquered, it should be an easy matter to select the proper method and successfully Lacquer or Enamel if the directions presented in the following chapters are followed. Advice as to what kind and grade of Lacquer or Lacquer Enamel is most desirable for use on special objects or surfaces to obtain the maximum satisfaction, will be given, and The Egyptian Lacquer Mfg. Co. with its progressive organization of nearly a half century's stability is at the service of any Lacquer



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or Lacquer Enamel user or prospective Lacquer or Lacquer Enamel user.

The importance of maintaining the beauty of the finish for the purpose of selling the article precludes a manufacturer from taking any chances with an inferior Lacquer. Especially is this true since the Lacquer cost is an infinitesimal part of his cost of production—yet for the purpose of commercializing his wares, perhaps the most important.

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IV.

Importance of Cleaning Before Lacquering

NEXT in importance to quality of Lacquer, comes cleanliness of the article to be Lacquered before the application of the Lacquer.

It is absolutely essential that any article or portion of an article which is to be Lacquered should be perfectly clean. Dirt, grease or stains of any kind may not be visible to the naked eye before the metal has been Lacquered, but shortly after the Lacquer has been placed upon it, the grease, dirt or stains which have not been removed may show themselves as ugly marks or may cause the Lacquer to peel in these places. The Lacquer, which has great cleaning properties in itself, will loosen up this dirt and grease, with the result that a red or cloudy shade is imparted to the Lacquer, usually in spots and streaks, and the Lacquer is thought by many not to be as transparent as it should.

If a brush Lacquer is used, this dirt will be dragged out and mix with the Lacquer, thus making a streaky, cloudy finish, dulling the polish of the metal to such an extent that the work has an inferior look. A dip Lacquer will remove some of the dirt, but the Lacquer in the tank is soon muddy, and if further used will give a dirty yellow color to the work it is put on.

If work is to be perfect throughout, some method of cleaning before Lacquering is absolutely essential. On some classes of work, where a chemical cleaning solution will get into points, crevices or inside of articles that cannot be readily dried, it is advisable to use Egyptian Liquid Cleaner or thinner. Either of these



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will remove the dirt and then evaporate, leaving the work perfectly dry and clean.

It is also necessary to work with clean vessels. This applies to the vessels used for Dip Lacquering. When a container, which has been used for a certain Lacquer is required for one of another kind, much annoyance can be avoided by taking care to remove every trace of dirt from it before using it to prepare or hold another solution or Lacquer.

On cleaning alone, more than any other operation, depends the future of the finished goods. No matter how artistic the design may be or how skillful the workmanship of the maker or finisher, the final cleaning and lacquering will, to a great extent, decide the attractiveness of an article, and as pointed out before, its salability—which, when everything is said and done, is the prime object of its manufacture.



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V.

Lacquering and Enameling Methods

A SEPARATE room should be set aside for Lacquering, and it should be large enough so a drying oven can be built in one end of it. Or if the oven must be built outside of this room, it should be arranged so the opening into the oven will be directly off the Lacquer room. If the Lacquered work has to be carried far, it is subjected to particles of dust which are ever present and active in the cleanest of places.

The Lacquer room should also be built so as to be as nearly dustproof as possible, and it is advisable to oil the floor as an insurance against dust being worked up from a dry floor. Dust is perhaps the greatest menace to the clear, transparent finish that Lacquer would give if free from foreign particles and is responsible more than any other cause for the cloudy, gritty appearance Lacquered work sometimes assumes.

Brush Lacquering.—Brush Lacquers are applied with a camel's hair brush. The Lacquer must not be thinned too much, as it will have a tendency to show rainbow colors. The iridescent colors increase as the film becomes thinner and articles showing these colors will invariably tarnish, as the protective film is not of sufficient thickness to insure a permanent coating on the underlying surface. The thinning depends largely upon the kind of brush used, a soft one permitting a greater quantity of Lacquer to adhere to the article than a stiff brush. For this reason, a soft brush will allow the use of a greater proportion of thinner and still avoid the appearance of rainbow colors. While there can be no set rule for the mixing of Lacquer and thinner, it is generally



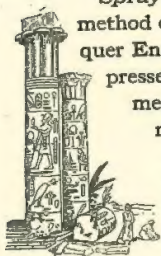
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recommended that two to three parts of Lacquer be used to one part of thinner. In the case of mat finishes, more thinner can be used than is required for finishing polished surfaces.

Dip Lacquering.—Dip Lacquers should be thinned so as to run off freely and prevent drips, but as in Brush Lacquering, care should be taken that they are not thinned excessively, as the same tendency to show rainbow colors will appear. The first thing to be considered in connection with the dipping method is the tank or container that is to be used for the Lacquer. It should first of all be of sufficient size to accommodate the largest work which is to be Lacquered in it. If a porcelain lined tank or crock can be procured, it is better since there will be no corrosive elements to affect the Lacquer, which often happens where the tank has a metal lining. If a metal lined tank has to be used, heavily tinned stock is the safest. Galvanized iron or sheet zinc will be attacked by the Lacquer. The Lacquer will take up the zinc, dissolve it and then turn to a milky color. Brass or copper linings will cause the Lacquer to take on a green color.

For dipping small articles, they may either be strung on wires of the same or similar metal, or put in a perforated kettle, stone jar, wire or reed basket and then dipped. It is best for the suspending wires to be of the same material as the article, as there is less chance of causing a stain to the work. In dipping large work, it should be hung to dry so the drip runs to one or as few points as possible.

Spray Lacquering.—The Spray Lacquering method consists of throwing the Lacquer or Lacquer Enamel on the work by means of compressed air, and is one of the most popular methods of application due to the many more finishes made possible by its use



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than any other means of applying and also to its economical qualities. With the sprayer, it is possible to blend one color with another producing many odd and unique finishes which could never be made by brushing or dipping. The time and labor saved and results obtained more than warrant its use wherever it is practical to install a spraying outfit. In order to get the best results, Lacquer and thinner should be mixed approximately in equal parts, and care should be taken that an even coating is put on the work. To insure this point, one must take care that the nozzle of the sprayer is held the proper distance from the work. If held too closely, parts of the article nearest the nozzle will receive a heavy coat, while other portions of the same work, being further away, will get only a scant covering.

There is no set rule for gauging the distance that the nozzle should be held from the work—anywhere from 12 inches to 18 inches being about right. Much depends upon the nature of the work being Lacquered and a good rule to follow is to hold the nozzle so that the width of the screen thrown corresponds with the size of the object being Lacquered. This means that when doing small work the sprayer must be held closer, while on large objects it can be held at a greater distance.

This method is especially adapted for Lacquering grill work and articles which have irregular surfaces upon which the application of Lacquer would be difficult if it were not for the air carrying the Lacquer to secluded corners of the work. Lacquers are usually applied with an air pressure of not less than 25 pounds.

As in the other operations, it is essential that everything in connection with the sprayer be kept absolutely clean. Care should be taken to wash out all Lacquer



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jars before using. The compressed air should be examined for impurities such as oil, moisture, etc., and the nozzle should be kept clean and free.

Spray Lacquering is economical from the standpoint of labor and time saved and an added advantage is the beauty and uniformity of the finish obtained by its use.

The foregoing brief directions apply to plain transparent Lacquers and to colored transparent Lacquers, but in many cases where a color is desired on an object, it is not always practical to use a transparent colored Lacquer. It is then that we recommend the use of Egyptian Lacquer Enamels, which are opaque and can be had in almost every known tint of color as well as black and white.

Egyptian Lacquer Enamels may be applied by air spray method or by the dipping process. The spraying is preferable, however, especially for sizeable articles, as bulky shapes cannot be manipulated rapidly enough to allow an even flow when dipped, or to draw the final drip to a point convenient for removal without disfigurement.

To spray, thin Enamel to a satisfactory working consistency with *Egyptian Enamel Thinner*, but do not thin to the point of sacrificing the covering qualities in order to hurry the flow. The work to be covered should be revolved on a disc or in the hand to get uniformity, covering and smoothness. The spray should be worked at a proper distance from the article and the enamel leave the nozzle in sufficient volume to have the vapor apply "wet"

which will allow sufficient time for flowing to a smooth coat. From six to ten inches distance between the nozzle and work will give the most satisfactory results.

If applied too closely, the enamel is likely to have a wavy appearance, or if applied at too great a



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distance, the "spent" vapor will go on rough and sandy.

One coat of the darker enamels will give an opaque covering on all surfaces. Lighter colors and shades sometimes require two or three coats for full covering. It is not advisable to attempt a covering with one coat of the lighter shades by applying very heavily, as such body loses adhesiveness and binding strength.

The dipping method is a satisfactory one for applying the enamel to small articles or larger perpendicular shapes where the fall of the drip is uniform and not passing around projections. For best results, the work should be done mechanically with a machine which will draw the article from the dip slowly, allowing the weight of the enamel to aid in even distribution as it is drawn out.

Egyptian Lacquer Enamels are air-drying and show an egg-shell gloss. To produce a medium lustre, *Water White Finishing Lacquer* may be added to the *Opaque Enamels* in the proportion of from five to twenty per cent. Where a high gloss is required, put on a coat of *Transparent Finishing Lacquer* over the color coat after same has become thoroughly dry. The finishing coat lends great durability to the finish, which can be cleaned where locality requires and will resist atmosphere, fumes and hot water.



VI.

Treatment of Articles After Lacquering or Enameling

EGYPTIAN Lacquers and Lacquer Enamels are air-drying, and aside from placing the work Lacquered or Enameled where it will be free from dust and moisture, no other precautions are necessary. However, it is sometimes found advisable to dry work by heat, which accelerates this operation. For those who prefer this, we recommend a Lacquerer's oven, which is usually a room or large box constructed of sheet metal, heated by steam radiators or pipe coils of perfect construction, in order to avoid the escape of moisture. The ovens are also provided with a chimney or vent hole to carry off the vapors arising from the drying Lacquer. These ovens must be kept perfectly free from dust, smoke and moisture.

Upon the degree of heat to which the Lacquered article is to be subjected much depends, both as to the color of the article Lacquered as well as to the durability and uniform finish of the Lacquered surface. In order to ascertain the exact temperature at which the best results can be obtained, each workman must make his own tests. Brass goods differ from a brass deposit placed on iron, a stamped escutcheon differs from a silver-plated sash fastener, and the base of an ornamental lamp is different from the body of a cash register. Therefore, the best temperature must be found for each Lacquer upon each particular class of work, and it behooves the careful operator to pay attention to this point.

When the best temperature to which the Lacquered article is to be heated is ascertained, it becomes very important to keep this heat at a uniform point and



not to permit the oven or drying room to become too hot.

If too much heat is used, the Lacquer coating dries too fast and becomes brittle. In the case of Lacquered silverware, the metal has a tendency to discolor, as is also the case with White Lacquer Enamel. The amount of heat required for drying must be determined by the person using the Lacquer or Enamel, as there is no specified rule for this part of the work. It is advisable to run a temperature of from 80° on articles coated with Bronze Powder to 160° for Lacquered iron.



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A Few of Our Recent Publications

"DO YOU KNOW POLLY KROME"—A booklet on Polychrome Finishing.

"THE SPRAYER'S THE THING No. 2"—A treatise on the use of Spraying Lacquers.

"SHOW ME, I WANT TO KNOW"—Helpful Lacquer Hints of interest to all who are using Lacquers.

"EGYPTIAN BLACK LACQUERS"—A brief general description of the three principal Black Finishes—Dull or Mat, Semi-Glossy and Glossy.

"THE GOSPEL OF LACQUER EFFICIENCY"—Lacquer in all its branches, explaining clearly and concisely, as well as recommendations of grades of Lacquers for special requirements.

"EGYPTIAN INCANDESCENT LAMP DIPS"—A treatise on the use of colored Lacquers for incandescent lamps and colored glass.

"EGYPTIAN LACQUER ENAMELS"—A color booklet showing twenty-four standard shades of Egyptian Lacquer Enamels.

If you are interested in any of the above booklets, we will be pleased to send you a copy of any upon receipt of your request.



